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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,378	12/04/2003	Hung Yu Yang	BP2095DIV	6940

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EXAMINER

TRINH, MINH N

ART UNIT PAPER NUMBER

3729

DATE MAILED: 03/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/727,378

Applicant(s)

YANG ET AL.

Examiner

Minh Trinh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>7/28/05</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Specification***

1. The abstract of the invention should be revised to readable on the method invention.

### ***Claim Objections***

2. Claims 1-8 are objected to because, it is unclear as to what being claimed as "magnetically coupled. . ." (see claim 1, line 11). Please define.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Tomono et al (4,803,453).

Tomono et al discloses a product by process of manufacturing transformer comprising: creating on a substrate, a primary winding 14a having at least one primary turn, wherein the at least one primary turn substantially symmetrical, and wherein the primary winding is on at least one dielectric layer 14; and

creating on the substrate, a secondary winding 11a having at least one secondary turn, wherein the at least one secondary turn is substantially symmetrical,

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and wherein the secondary winding is on at least one other dielectric layer 11 and is magnetically coupled to the primary winding (see Figs. 1-2).

5. Claim 1 is also rejected under 35 U.S.C. 102(b) as being anticipated by Frye et al (6,097,273).

Frye et al discloses a method of manufacturing an on-chip transformer balun, the method comprises: creating on a substrate, a primary winding 11 having at least one primary turn, wherein the at least one primary turn substantially symmetrical, and wherein the primary winding is on at least one dielectric layer 22; and

creating on the substrate, a secondary winding 24 having at least one secondary turn, wherein the at least one secondary turn is substantially symmetrical, and wherein the secondary winding is on at least one other dielectric layer 21 and is magnetically coupled to the primary winding.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomono et al in view of Christensen (6,794,977).

Tomono et al disclose the invention as claimed as cited above except for a plurality of turns on a first dielectric layer. Christensen discloses a plurality of turn conductor for planar transformer with plurality of metal bridges (as shown in Figs. 8-11 and his discussion at col. 4, lines 26-67). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to employ the Christensen's teachings of multiple turn conductor and metal bridges as taught by onto the invention of Tomono et al in order to form a design transformer having the above configuration requirements for many known benefits including carrying a large current, etc.

As applied to claims 4-5, noting the conductors of Christensen are interwoven spiral type (see figures 8-11). It would have been obvious to a person of ordinary skill in the art to use interwoven spiral as taught by Christensen and Tomono et al. The motivation would have been to solidify the conductor. Therefore, it would have been obvious to combine Christensen and Tomono et al.

7. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tomono in view of Li (5477204). Tomono et al disclose the invention as claimed as cited above except for a center tap connected to ground. Li discloses a center tap 107 connected to ground (see Fig. 2, and the discussion at column 3, lines 21 -33). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use center tap as taught by Li onto Tomono for various known benefits including balancing and/or unbalancing of the transformer.

8. Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomono in view of Christensen and Frye et al. (6,097,273) .

Tonomo et al disclose the invention as claimed except for additional turn or another turns on second one of the dielectric layer. Christensen discloses a plurality of turn conductor for planar transformer in figures 8-1 1, with plurality of metal bridges col.

4. Further, Frye et al disclose forming vias 27, 28 connection for interconnecting transformer turns or coils see figure 2, and the discussion at col.3, lines 13-20).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to employ the Christensen and Frye et al teachings as described above onto the Tomono et al invention for connecting the turns through the dielectric layers by using the available techniques such as vias connections.

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art cited for their teachings of forming transformer or the like.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minh Trinh whose telephone number is (571) 272-4569. The examiner can normally be reached on Monday -Thursday 8:00 am to 4:30 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on (571) 272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mt  
3/8/06



MINH TRINH  
PRIMARY EXAMINER